

## **INTEGRATION OF GRAPHIC DISPLAY ELEMENTS, PROCESS MODULES AND CONTROL MODULES IN PROCESS PLANTS**

### **ABSTRACT**

Graphic displays, which display information about process elements and the manner in which these elements are connected within a process, process modules, which simulate the operation of the elements depicted within the graphic displays and control modules, which perform on-line control activities within a process, may be communicatively connected together to provide a combined control, simulation and display environment that enables enhanced control, simulation and display activities. Smart process objects, which have both graphical and simulation elements, may be used to create one or more graphic displays and one or more process simulation modules, each having elements which may communicate with one another to share data between the graphic displays and the process modules. Additionally, function blocks within control modules executed in the process plant may reference the elements within the graphic displays and the process modules (and vice versa) so that control modules may use simulated data developed by the process modules to perform better control, so that process modules may perform better simulation using actual plant data from the control modules, and so that the graphic displays may be used to illustrate actual process data and/or simulated process data as developed by the control modules and the process modules.